CONTRACT

SPECIAL PROVISIONS

CSI-Inch/Pound

Project No: SP-0068(29)57

Name: SR-68, 2100 SOUTH TO NORTH TEMPLE

ROTOMILL AND THIN OVERLAY

County: SALT LAKE

Bid Opening: July 15, 2003

Date

UDOT

GOING THE EXTRA MILE

State-Orange Book With 8 ½" x 11" Plan Sheets

2002 - U.S. Standard Units (Inch-Pound Units) June 3, 2003

Table of Contents

Project SP-0068(29)57

I. 2002 Standard Specifications

The State of Utah Standard Specifications for Road and Bridge Construction, U.S. Standard Units (Inch Pound Units) CSI Format, Edition of 2002 with Changes One and Two included applies on this project as a static Specification Book.

Refer to Part II (List of Revised Standard Specifications) and Part XIV (Special Provisions) for other project specific specifications.

II. List of Revised Standard Specifications

Change One – Included in 2002 Standard Specifications

Revised August 29, 2002

Section 00570 Articles 1.2 A 69, A 71 b (deleted)
Section 00727 Articles 1.1 D; 1.5 B; 1.9; 1.10; 1.16 B, C; 1.18 B
Section 01574 Articles 1.2 B
Section 02721 Articles 1.2 D (added), H (replaced), I (deleted);1.6 B1; 2.1 A Table 3; 3.2 C
Section 02741 Articles 3.8 E 2 a, b
Section 02821 Articles 3.1 A
Section 02892 Articles 1.5 A, B
Section 02936 Articles 1.4; 1.5 C
Section 03152 Articles 1.2 P, Q; 2.2 A, B
Section 05120 Articles 1.4 A (deleted), 3.3 A
Section 16525 Articles 1.6 A, B

Change Two – Included in 2002 Standard Specifications

Revised December 19, 2002

Section 01561 Article 3.1 A
Section 02075 Article 2.7 A
Section 02372 Article 2.1 A 4
Section 02455 Article 3.3 B 2
Section 02785 Article 3.2 C
Section 02861 Article 3.3 A
Section 03055 Articles 1.2 P (inserted), 2.3 B, 2.4 (deleted), 2.7 A 1 a-e (added), 2.7 B 2 (added), 2.8 A 1 a, 2.8 A 2 (deleted), 2.9 A3, 3.2 A Table, 3.2 C, 3.7 A 3, 3.8 C 1, 3.9 A-B, 3.10, 3.11 B 1, 3.11 B 3
Section 07922 Article 2.1 Table 1

Change Three

Revised February 27, 2003

Section 01355 Article 1.3 A 3
Section 01721 1.4 C deleted and moved to Measurement and Payment document
Section 02222 Changed title from Site Demolition-Pavement to Site Demolition - Concrete, A, 3.2 Title, 3.2 A
Section 02224 New Specification
Section 02316 1.2 A, D, I added, 1.3 added, 1.7 B, C, D, E, F, G added, 3.9 A added
Section 02455 3.3 B 2 (corrected error from change two)
Section 02721 1.2 Related Sections added, 1.3 H and I added, 1.7 B, 1.7 F deleted, 2.1 B added, 2.2 deleted, 3.1 Title changed, 3.2 B reference added, 3.2 E added
Section 02741 1.4 C6a added, 1.4 H, Table 3, 2.4 A, 2.4 C, Table 9, 2.5 B 1-3, 2.5 B 4 added, 2.5 D, 3.1 Al deleted, 3.2 C3 added, 3.7 D1, 3.9 B4, 3.9 B5 added, 3.9 E note added
Section 02744 Entire Section deleted
Section 02745 1.4 A9
Section 02785 1.2 C and D added
Section 02892 Added Articles, 1.3 N, O, Y, 1.5 D, 2.4 I, 2.5 C, D, E, 2.6 B3 - B6, 2.6 C, 2.16, 2.17, 3.11 and Revised Articles 3.5 F and Table Number, 3.5 G and Table Number
Section 02896 2.1 A, B and 3.1 A drawing number corrected
Section 16525 1.2 H

Change Four

Revised April 24, 2003

Section 00555 1.18 added Table 1
Section 01280 1.2 K
Section 01282 1.13 B added, 1.13 G 2 deleted
Section 02222 1.2 B Title Changed
Section 02231 3.5 A
Section 02705 Title Changed, 1.1 A, 1.3 added, 3.1 Title changed, 3.1 A, 3.1 D moved, 3.2 added
Section 02741 3.7 B
Section 02747 Entire Section deleted
Section 02752 1.8 E 1
Section 02753 3.1 D 5 a, 3.3 D
Section 02842 2.4A
Section 02861 2.1 I
Section 02911 3.2 A 1
Section 02931 3.2 B
Section 03392 2.1 A 8-9
Section 03921 2.1 A 1, 2.1 C
Section 03922 2.1 B 1-2
Section 03923 2.1 A-B, 3.1 B
Section 03924 2.2 A-B

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Section 03935 2.1 A, 2.1 A 2
Section 07105 2.3 A
Section 13553 1.2 C Title Changed
Section 13554 1.1 A, 1.3 C and D added, 2.1 A, 2.1 F, 2.2 D 1, 2.2 D 2 deleted, 2.2 E, 2.2 H, 2.2 H 2, 2.2 H 3 deleted and renumbered, 3.1 B 3 added, 3.1 I

III. Listing of Revised Standard Drawings

Change One

Revised December 19, 2002

AT 7	Polymer Concrete Junction Box Details	12/19/2002
BA 1A	Precast Concrete Full Barrier Standard Section	12/19/2002
BA 1B	Precast Concrete Full Barrier Standard Section	12/19/2002
BA 3	Cast In Place Constant Slope Barrier	12/19/2002
BA 4B	Beam Guardrail Installations	12/19/2002
BA 4C	Beam Guardrail Anchor Type I	12/19/2002
CC 6	Crash Cushion Type E Sand Barrel Details	12/19/2002
DG 3	Maximum Fill Height and End Sections for HDPE And PVC Pipes	12/19/2002
DG 4	Pipe Culverts Minimum Cover	12/19/2002
EN 4	Temporary Erosion Control (Drop-Inlet Barriers)	12/19/2002
GW 1	Raised Median and Plowable End Section	12/19/2002
PV 2	Pavement Approach Slab Details	12/19/2002
SL 13	Traffic Counting Loop Detector Details	12/19/2002
SN 2	Flashing School Sign	12/19/2002
SN 4	Flashing Stop Sign	12/19/2002
SN 5	Typical Installation For Milepost Signs	12/19/2002
SN 8	Ground Mounted Timber Sign Post (P1)	12/19/2002
ST 1	Object Marker "T" Intersection and Pavement Transition Guidance	12/19/2002
ST 7	Pavement Markings and Signs at Railroad Crossings	12/19/2002
SW 3A	Precast Concrete Noise Wall 1 of 2	12/19/2002
SW 3B	Precast Concrete Noise Wall 2 of 2	12/19/2002
SW 4A	Precast Concrete Retaining/Noise Wall 1 of 2	12/19/2002

Change Two

Revised February 27, 2003

GW 2	Concrete Curb and Gutter	02/27/2003
GW 5	Pedestrian Access	02/27/2003

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Change Three

Revised April 24, 2003

AT 7	Polymer-Concrete Junction Box Details	04/24/2003
CB 2	Curb Inlet Catch Basin	04/24/2003
CC 7	Grading & Installation Details Crash Cushion Type F	04/24/2003
CC 8	Grading & Installation Details Crash Cushion Type G	04/24/2003
CC 9A	Grading & Installation Details Crash Cushion Type H	04/24/2003 (New)
CC 9B	Grading & Installation Details Crash Cushion Type H	04/24/2003 (New)
EN 2	Temporary Erosion Control (Silt Fence)	04/24/2003
GW 2	Concrete Curb and Gutter	04/24/2003
SN 12B	Ground Mounted Sign Installation Details	04/24/2003

IV. Materials Minimum Sampling and Testing

Follow the requirements of the Current Materials Minimum Sampling and Testing Manual:

Materials Minimum Sampling and Testing Manual reference can be found from the UDOT Web Site at:
http://www.dot.utah.gov/esd/Manuals/Materials/MaterialsSampling.htm

For UDOT employees the Manual can also be found on the Shared Drive at:
\Shared\Engineering Services\Manuals\Materials (W drive for the Complex and R drive for the Regions)

V. Notice to Contractors

NOTICE TO CONTRACTORS

Sealed proposals will be received by the Utah Department of Transportation UDOT/DPS Building (4th Floor), 4501 South 2700 West, Salt Lake City, Utah. 84114-8220, until 2 o'clock p.m. Tuesday, July 15, 2003, and at that time the download process of bids from the USERTrust Vault to UDOT will begin, with the public opening of bids scheduled at 2:30 for ROTOMILL AND THIN OVERLAY of SR-68, 2100 SOUTH TO NORTH TEMPLE in SALT LAKE County, the same being identified as State Maintenance Project No: SP-0068(29)57.

Federal Regulations:
Wage Rate Non-Applicable.

Project Location: 3.13 Miles of Route: 0068 from R.P. 56.20 to R.P. 59.33

The principal items of work are as follows (for all items of work see attachment):
HMA - 1/2 inch
Rotomilling - 1 Inch
Pedestrian Access Ramp Type E

The project is to be completed: in 266 Calendar Days.

Other Requirements:
All project bidding information, including Specifications and Plans, can be viewed, downloaded, and printed from UDOT's Project Development Construction Bid Opening Information website, http://www.dot.utah.gov/cns/bidopeninfo.htm. To bid on UDOT projects, bidders must use UDOT's Electronic Bid System (EBS). The EBS software and EBS training schedules are also available on this website.

Project information can also be reviewed at the main office in Salt Lake City, its Region offices, and its District offices in Price, Richfield, and Cedar City.

Project Plans cannot be downloaded or printed from the website unless your company is registered with UDOT. Go to UDOT's website to register. Unregistered companies may obtain the Specifications and Plans from the main office, 4501 South 2700 West, Salt Lake City, (801) 965-4346, for a fee of $20.00, plus tax and mail charge, if applicable, none of which will be refunded.

Prequalification of bidders is required. Prior to submitting a bid, the bidder must have on file with the Utah Department of Transportation a completed and approved contractor's application for prequalification. Department processing time is 10 working days from receipt of properly executed documentation.

As required, a contractor's license must be obtained from the Utah Department of Commerce.

Each bidder must submit a bid bond from an approved surety company on forms provided by the Department; or in lieu thereof, cash, certified check, or cashier's check for not less than 5% of the total amount of the bid, made payable to the Utah Department of Transportation, showing evidence of good faith and a guarantee that if awarded the contract, the bidder will execute the contract and furnish the contract bonds as required.

The right to reject any or all bids is reserved.

If you need an accommodation under the Americans with Disabilities Act, contact the Construction Division at (801) 965-4346. Please allow three working days.

Additional information may be secured at the office of the Utah Department of Transportation, (801) 965-4346.

Dated this 28th day of June, 2003.

UTAH DEPARTMENT OF TRANSPORTATION
John R. Njord, Director

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VI. EQUAL OPPORTUNITY (STATE PROJECTS)

Selection of Subcontractors, Service Providers, Procurement of Materials and Leasing of Equipment:

Do not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

Notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.

Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. Use best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Obtain lists of DBE construction firms from SHA personnel.

Use best efforts to ensure subcontractor compliance with their EEO obligations.

Selection of Labor:

During the performance of this contract, do not discriminate against labor from any other State, possession, or territory of the United States.

Employment Practices:

During the performance of this contract, the Contractor agrees as follows:

Do not discriminate against any employee or applicant for employment because of race, religion, sex, color, national origin, age, or disability. Take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, religion, sex, color, national origin, age, or disability. Such action includes, but is not be limited to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoffs or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Agree to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the State Department of Transportation setting forth the provisions of this nondiscrimination clause.

In all solicitations or advertisements for employees state that all qualified applicants receive consideration for employment without regard to race, religion, sex, color, national origin, age, or disability.

Send to each labor union or representative of workers that the Contractor has a collective bargaining agreement or other contract or understanding, a notice to be provided by the State Department of Transportation advising the said labor union or worker' representative of the commitments under this section and post copies of the notice in conspicuous places available to employees and applicants for employment.

In the event of noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further State contracts.

Include the provisions of this Section in every subcontract or purchase order so that such provision will be binding upon each Subcontractor or vendor. Take such action with respect to any subcontract or purchase order as the State Department of Transportation may direct as a means of enforcing such provisions including sanctions for noncompliance.

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VII. Bidding Schedule

Utah Department of Transportation
Bidder's Schedule

Bid Opening Date: 7/15/2003
Project Number: SP-0068(29)57
Project Name: SR-68, 2100 SOUTH TO NORTH TEMPLE
Description: ROTOMILL AND THIN OVERLAY
Funding MAINTENANCE

Region: REGION 2
County SALT LAKE

#	Item	Description	Quantity	Unit
10 - ROADWAY				
1	012850010	Mobilization	1	lump sum
2	013150010	Public Information Services	1	lump sum
3	015540005	Traffic Control	1	lump sum
4	01557000*	Maintenance of Traffic (MOT)	1	lump sum
5	015580005	Temporary Pavement Markings	113240	foot
6	018920040	Reconstruct Valve Box	50	each
7	018920050	Reconstruct Manhole	79	each
8	018920060	Reconstruct Monument Box	8	each
9	02738000*	Soft Spot Repair Type A	1200	square foot
10	02738001*	Soft Spot Repair Type B	1200	square foot
11	027410050	HMA - 1/2 inch	12480	ton
12	027480040	Emulsified Asphalt CSS-1	100	ton
13	027650020	Pavement Message Paint	348	each
14	027650060	Pavement Marking Paint	56620	foot
15	02771007P	Pedestrian Access Ramp Type C	4	each
16	02771008P	Pedestrian Access Ramp Type E	43	each
17	02893000*	Repair Loop Detectors	31	each
18	029610020	Rotomilling - 1 Inch	153650	square yard

Note: Item numbers ending with "" or "P" identify a change to the Standard Specification, Supplemental Specifications or Measurement and payment. Read all related documents carefully.

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VIII. Measurement and Payment

MEASUREMENT AND PAYMENT

SP-0068(29)57
SR-68, 2100 South to North Temple

The Department will measure and pay for each bid item as detailed in this section. Payment is contingent upon acceptance by the Department.

Items are listed by Specification and in tables as follows:

Item #	Bid item number	Bid Item Name	Unit of measurement and payment
Additional information goes here.			

1	**012850010**	**Mobilization**	**Lump sum**
	Payment	**Amount Paid**	**When Paid**
	First	The lesser of 25% of Mobilization or 2.5% of contract	With first estimate
	Second	The lesser of 25% of Mobilization or 2.5% of contract	With estimate following completion of 5% of contract
	Third	The lesser of 25% of Mobilization or 2.5% of contract	With estimate following completion of 10% of contract
	Fourth	The lesser of 25% of Mobilization or 2.5% of contract	With estimate following completion of 20% of contract
	Final	Amount bid in excess of 10% of contract price.	Project Acceptance-Final

2	**013150010**	**Public Information Services**	**Lump Sum**
	Payment	**Amount Paid**	**When Paid**
	One	25% of bid item amount	With first estimate
		Remaining portion of bid item paid as a percentage of the contract completed	With each estimate

3	**015540005**	**Traffic Control**	**Lump Sum**
	Payment	**Amount Paid**	**When Paid**
	One	25% of the bid item amount	With first estimate
		Remaining portion of bid item paid as a percentage of the contract completed	With each estimate

4	**01557000***	**Maintenance of Traffic (MOT)**	**Lump Sum**
	Payment	**Amount Paid**	**When Paid**
	One	25% of the bid item amount	With first estimate
		Remaining portion of bid item paid as a percentage of the contract completed	With each estimate

5	**015580005**	**Temporary Pavement Markings**	**Feet**
The Temporary Pavement Markings will be placed on the rotomilled surface and on the HMA.			

6	**018920040**	**Reconstruct Valve Box**	**Each**
In place			

7	**018920050**	**Reconstruct Manhole**	**Each**
In place			

8	**018920060**	**Reconstruct Monument Box**	**Each**
In place			

9	02738000*	Soft Spot Repair Type A	Sq Ft
Include all items necessary to complete the soft spot repair			

10	02738001*	Soft Spot Repair Type B	Sq Ft
Include all items necessary to complete the soft spot repair			

11	027410050	HMA – 1/2 inch	Ton
Include aggregates, asphalt binder, hydrated lime, other additives, etc. The Department will not pay separately for asphalt binder, hydrated lime, additives, etc.			

12	027480040	Emulsified Asphalt CSS-1	Ton
Do not measure water added in excess of the specified amount in Standard Specification 02745.			

13	027650020	Pavement Message Paint	Each

In place, measurement - Painted Pavement Messages:

A. Letter = one message.
B. Arrow = one message.
C. Multi-headed arrow = one message per arrow.
D. School crossbars = one message per 24 inch x 10 ft bar.
E. Crosswalk = two message per lane and two messages per shoulder.
F. Stop Bar = one message per lane and one message per shoulder.
G. Railroad crossing markings = seven messages per lane.
    1. 'R' = one message each (two required).
    2. 'X' = two messages.
    3. Transverse Bar = one message each (two required).
    4. Stop Bar = one message.

Payment:

A. The Department will not pay for removal of unauthorized, smeared, or damaged markings.
B. Price reduction for paint application rate:

Rate	Pay Factor
At the specified rate	1.0
1-10 percent below the specified rate	0.75
11-15 percent below the specified rate	0.50
More than 15 percent below the specified rate	May be accepted at 0.40 or required to be repainted.

14	027650060	Pavement Marking Paint	Feet

In place, Payment:

A. The Department will not pay for removal of unauthorized, smeared, or damaged markings.

B. Price reduction for paint application rate:

Rate	Pay Factor
At the specified rate	1.0
1-10 percent below the specified rate	0.75
11-15 percent below the specified rate	0.50
More than 15 percent below the specified rate	May be accepted at 0.40 or may be required to be repainted.

15	02771007P	Pedestrian Access Ramp Type C	Each

In place

Price Adjustments for Strength

A. When concrete is below specified strength:

1. Department may accept item at a reduced price
2. The pay factor will be applied to the portion of the item which is represented by the strength tests that fall below specified strength.
3. Department will calculate the pay factor as follows:

Psi below specified strength:	Pay Factor:
1 - 100	0.98
101 - 200	0.94
201 - 300	0.88
301 - 400	0.80
More than 400	0.50 or Engineer may reject

B. This item will include the removal of the curb and gutter, existing ramps, sidewalk, sawing, untreated base course, excavation and all other items necessary to complete the item Pedestrian Access Ramp Type C.

C. If the existing curb grades are acceptable, the contractor will have the option of sawcutting of the back of curb to match grades to the new ramp.

16	02771008P	Pedestrian Access Ramp Type E	Each

In place
Price Adjustments for Strength

A. When concrete is below specified strength:
   1. Department may accept item at a reduced price
   2. The pay factor will be applied to the portion of the item which is represented by the strength tests that fall below specified strength.
   3. Department will calculate the pay factor as follows:

Psi below specified strength:	**Pay Factor:**
1 - 100	0.98
101 - 200	0.94
201 - 300	0.88
301 - 400	0.80
More than 400	0.50 or Engineer may reject

B. This item will include the removal of the curb and gutter, existing ramps, sidewalk, sawing, untreated base course, excavation and all other items necessary to complete the item Pedestrian Access Ramp Type E.

C. If the existing curb grades are acceptable, the contractor will have the option of sawcutting of the back of curb to match grades to the new ramp.

17	02893000*	Repair Loop Detectors	Each

Include all material, workmanship to complete the item loop/counting detector repair

18	029610020	Rotomilling - 1 inch	Square Yard

The mill tailings will become the property of the Contractor.

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IX. PDBS Project Summary Report

Summary Report

Project: SP-0068(29)57 **Version: 1**

SR-68, 2100 SOUTH TO NORTH TEMPLE

Detail	Alt Group	Alt #	Description
10 - ROADWAY	0	0	

Item Number	Description	Qty	Unit
012850010	Mobilization	1	Lump
013150010	Public Information Services	1	Lump
015540005	Traffic Control	1	Lump
01557000*	Maintenance of Traffic (MOT)	1	Lump
015580005	Temporary Pavement Markings	113,240	ft
018920040	Reconstruct Valve Box	50	Each
018920050	Reconstruct Manhole	79	Each
018920060	Reconstruct Monument Box	8	Each
02738000*	Soft Spot Repair Type A	1,200	sq ft
02738001*	Soft Spot Repair Type B	1,200	sq ft
027410050	HMA - 1/2 inch	12,480	Ton
027480040	Emulsified Asphalt CSS-1	100	Ton
027650020	Pavement Message Paint	348	Each
027650060	Pavement Marking Paint	56,620	ft
02771007P	Pedestrian Access Ramp Type C	4	Each
02771008P	Pedestrian Access Ramp Type E	43	Each
02893000*	Repair Loop Detectors	31	Each
029610020	Rotomilling - 1 Inch	153,650	sq yd

X. PDBS Detailed Stationing Summaries Report

Detailed Report

SP-0068(29)57 **Version: 1**

SR-68, 2100 SOUTH TO NORTH TEMPLE

10 - ROADWAY **Alt Group: 0** **Alt #: 0**

Item Number	Description	Use Qty	Unit
015580005	**Temporary Pavement Markings**	113,240	ft

Note #	Note
1	The quantity has been doubled for two applications

018920040 **Reconstruct Valve Box** 50 Each

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
SR68	56.2		59.33		50.0	
					50.0	

018920050 **Reconstruct Manhole** 79 Each

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
SR68	56.2		59.33		79.0	
					79.0	

018920060 **Reconstruct Monument Box** 8 Each

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
SR68	56.2		59.33		8.0	
					8.0	

02738000* **Soft Spot Repair Type A** 1,200 sq ft

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
SR68	56.20		59.33		1,200.0	Estimated quantity
					1,200.0	

02738001* **Soft Spot Repair Type B** 1,200 sq ft

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
SR68	56.20		59.33		1,200.0	Estimated quantity
					1,200.0	

10 - ROADWAY **Alt Group: 0** **Alt #: 0**

Item Number	Description	Use Qty	Unit
027410050	**HMA - 1/2 inch**	12,480	Ton

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
					-499.28	for raised islands
SR68	56.2		56.7		2,500.0	length = 2640', width = 105'
SR68	56.7		56.82		600.0	length = 633.6', width = 105'
SR68	56.82		57.02		885.71	length = 1056', width = 93'
SR68	57.02		57.18		708.57	length = 844.8', width = 93'
SR68	57.18		57.24		280.0	length = 316.8', width = 98'
SR68	57.24		58.38		4,234.28	length = 6019.38', width = 78'
SR68	58.38		58.51		520.0	length = 686.4', width = 84'
SR68	58.51		58.58		273.33	length = 369.6', width = 82'
SR68	58.58		58.91		1,288.57	length = 1742.4', width = 82'
SR68	58.91		59.04		507.62	length = 686.4', width = 82'
SR68	59.04		59.19		585.71	length = 792', width = 82'
SR68	59.19		59.33		593.33	length = 739.2', width = 89'
					12,477.84	

Note #	Note
1	The Thin overlay will be 1 1/2" thick assumed weight of 144.3 lb/cu ft

10 - ROADWAY **Alt Group: 0** **Alt #: 0**

Item Number	Description	Use Qty	Unit
027480040	**Emulsified Asphalt CSS-1**	100	Ton

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
					-3.97	for existing raised islands
SR68	56.2		56.7		19.89	length = 2640', width = 105'
SR68	56.7		56.82		4.77	length = 633.6', width = 105'
SR68	56.82		57.02		7.05	length = 1056', width = 93'
SR68	57.02		57.18		5.64	length = 844.8', width = 93'
SR68	57.18		57.24		2.23	length = 316.8', width = 98'
SR68	57.24		58.38		33.69	length = 6019.2', width = 78'
SR68	58.38		58.51		4.14	length = 686.4' width = 84'
SR68	58.51		58.58		2.17	length = 369.6', width = 82'
SR68	58.58		58.91		10.25	length = 1742.4', width = 82'
SR68	58.91		59.04		4.04	length = 686.4', width = 82'
SR68	59.04		59.19		4.66	length = 792', width = 82'
SR68	59.19		59.33		4.72	length = 739.2' width = 89'
					99.28	

Note #	Note
1	0.155 GAL/SQ YD APPLICATION RATE

027650020	**Pavement Message Paint**	348	Each

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
SR68	56.21		56.7		46.0	8-stop bars, 28-x-walks, 10-arrows
SR68	56.7		56.82		20.0	4-stop bars, 14-x-walks, 2-arrows
SR68	56.82		57.02		22.0	2-rr(14messages), 4-arrows, 1-only
SR68	57.02		57.18		37.0	2-rr(14messages), 7-stop bars, 4-arrows
SR68	57.18		57.24		39.0	8-stop bars, 24-x-walks, 7-arrows
SR68	57.24		58.38		50.0	4-rr(28messages), 6-stop bars, 10-x-walks, 6-arrows
SR68	58.38		58.51		39.0	7-stop bars, 22-x-walks, 6-arrows, 2-dbl headed arrows
SR68	58.51		58.58		20.0	4-stop bars, 12-x-walks, 4-arrows
SR68	58.58		58.91		17.0	5-stop bars, 10-x-walks, 2-arrows
SR68	58.91		59.04		6.0	3=stop bars, 3-arrows
SR68	59.04		59.19		12.0	4-stop bars, 4-arrows, 2-dbl headed arrows
SR68	59.19		59.33		40.0	9-stop bars, 11-arrows, 1-only, 16-x-walks
					348.0	

10 - ROADWAY **Alt Group: 0** **Alt #: 0**

Item Number	Description	Use Qty	Unit
027650060	**Pavement Marking Paint**	56,620	ft

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
SR68	56.2		56.7		3,940.0	2420'= 4" white, 1520'= 8" white
SR68	56.7		56.82		2,033.6	1753.6'= 4" white, 280'= 8" white
SR68	56.82		57.02		3,025.0	2625'= 4" white, 400'= 8" white
SR68	57.02		57.18		2,732.0	2112'= 4" white, 620'= 8" white
SR68	57.18		57.24		1,193.6	533.6'= 4" white, 660'= 8" white
SR68	57.24		58.38		24,870.0	15048'= 4" white, 8362'= 4" yellow, 1460'= 8"white
SR68	58.38		58.51		3,360.0	1450'= 4" white, 1200'= 4" yellow, 710'= 8" white
SR68	58.51		58.58		2,228.1	909'= 4" white, 719.1'= 4" yellow, 600'= 8" white
SR68	58.58		58.91		4,626.0	4356'= 4" white, 270'= 8" white
SR68	58.91		59.04		1,770.0	1500'= 4" white, 270'= 8" white
SR68	59.04		59.19		2,802.0	2102'= 4" white, 700'= 8" white
SR68	59.19		59.33		4,039.25	2039.2'= 4" white, 2000'= 8" white
					56,619.55	

02771007P	**Pedestrian Access Ramp Type C**	4	Each

Note #	Note
1	Type C required at Redwood and I-80 Int.

02771008P	**Pedestrian Access Ramp Type E**	43	Each

Note #	Note
1	Type E required at all intersections except at 2100 S., 500 S. & North Temple

02893000*	**Repair Loop Detectors**	31	Each

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
SR68	56.2		59.33		31.0	
					31.0	

Detailed Report

SP-0068(29)57 **Version: 1**

SR-68, 2100 SOUTH TO NORTH TEMPLE

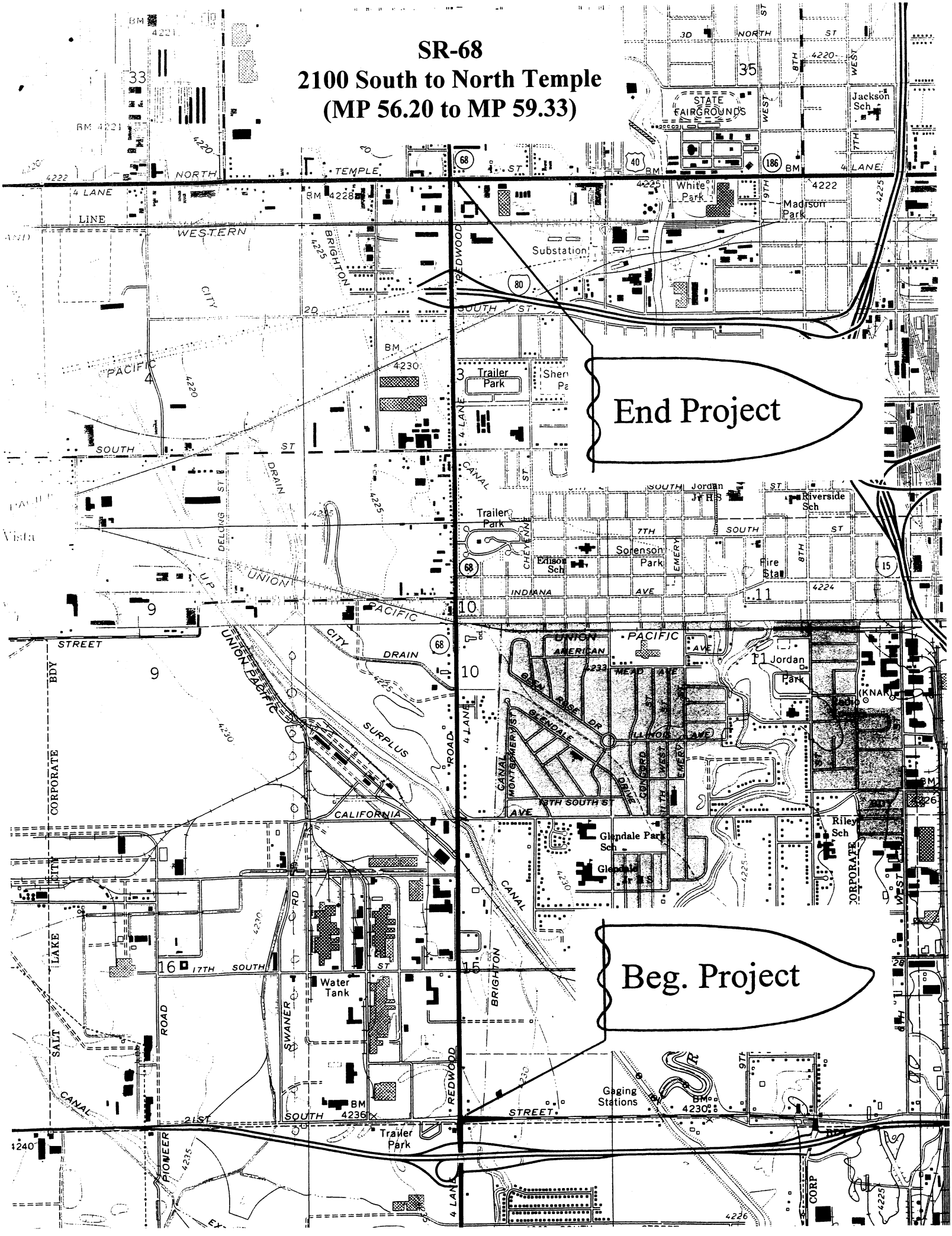
10 - ROADWAY **Alt Group: 0** **Alt #: 0**

Item Number	Description	Use Qty	Unit
029610020	**Rotomilling - 1 Inch**	153,650	sq yd

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
					-6,230.0	for existing raised islands
SR68	56.2		56.7		30,800.0	length = 2640', width = 105'
SR68	56.7		56.82		7,392.0	length = 633.6', width = 105'
SR68	56.82		57.02		10,912.0	length = 1056', width = 93'
SR68	57.02		57.18		8,729.6	length = 844.8', width = 93'
SR68	57.18		57.24		3,449.6	length = 316.8', width = 98'
SR68	57.24		58.38		52,166.4	length = 6019.2', width = 78'
SR68	58.38		58.51		6,406.4	length = 686.4', width = 84'
SR68	58.51		58.58		3,367.47	length = 369.6', width = 82'
SR68	58.58		58.91		15,875.2	length = 1742.4, width = 82'
SR68	58.91		59.04		6,253.87	length = 686.4', width = 82'
SR68	59.04		59.19		7,216.0	length = 792', width = 82'
SR68	59.19		59.33		7,309.87	length = 739.2', width = 89'
					153,648.41	

XI. Location Map

SR-68
2100 South to North Temple
(MP 56.20 to MP 59.33)



XII. Typical Sections or Detail Sheets

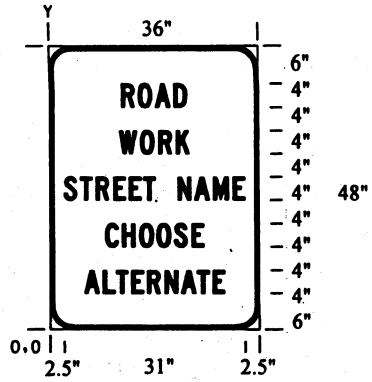
MAINTENANCE OF TRAFFIC (MOT) CONCEPT

NOTES :

1. VMS WILL BE PLACED ONE INTERSECTION IN ADVANCE OF WORK ZONE.
2. MOT WILL BE CUSTOMIZED FOR EACH LOCATION.
3. THE NUMBER & LOCATION OF VMS & STATIC SIGNS SHALL BE ADJUSTED TO SUIT ACTUAL FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
4. VMS PLACED ON 4 LANE CROSS STREETS. STATIC SIGNS PLACED ON 2 LANE CROSS STREETS.
5. VMS SIGNS SHALL BE IN PLACE 1 WEEK BEFORE CONSTRUCTION BEGINS.
6. PROVIDE OVERLAY PANEL FOR STREET NAME FOR EACH LOCATION

STATIC SIGN

B/O 36" X 48"

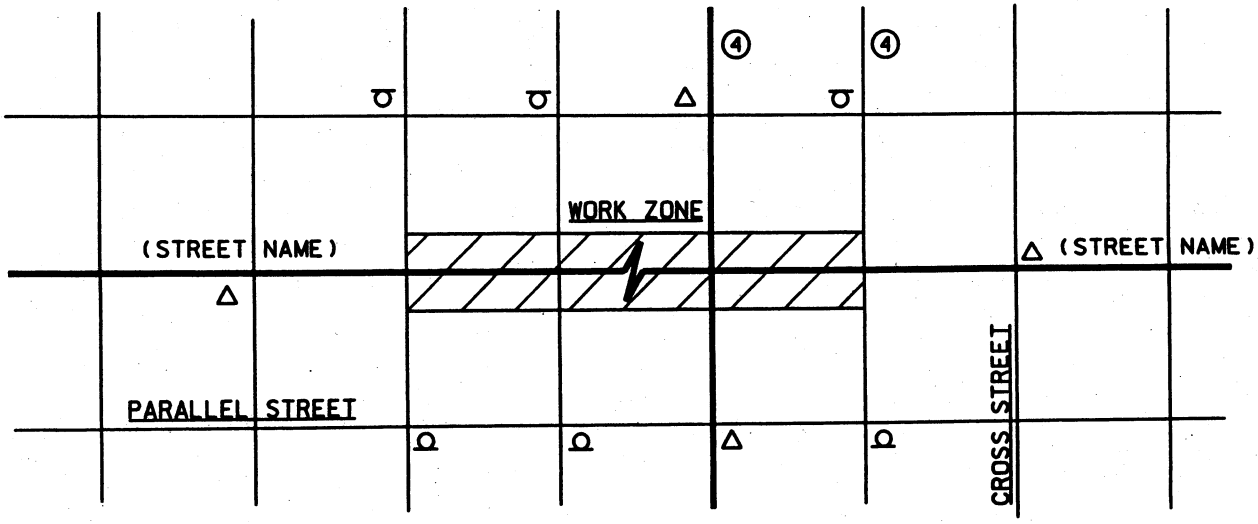


LETTERS FOR STATIC SIGN ARE SERIES "C"

STATIC SIGN MESSAGE
PLACED AT CROSS STREETS

LEGEND

△ VARIABLE MESSAGE SIGN (VMS)
b STATIC SIGN



XIII. STANDARD DRAWINGS INDEX

(Change Three, Dated 06/02/03)

UTAH DEPARTMENT OF TRANSPORTATION

U	NUMBER	TITLE	CURRENT DATE
		Advanced Traffic Management System (AT)	
	AT 1	Legend Sheet	07/03/02
	AT 2	Ramp Meter Details	07/03/02
	AT 3	Ramp Meter Sign Panel	07/03/02
	AT 4	Typical Ramp Meter Signal Head Mounting	07/03/02
	AT 5	Loop Installation	07/03/02
	AT 6	Conduit Details	07/03/02
	AT 7	Polymer-Concrete Junction Box Details	04/24/03
	AT 8	ATMS Cabinet w/120V Disconnect	07/03/02
	AT 9	ATMS Cab With Stepdown Transformer	07/03/02
	AT 10	Domed CCTV Details	07/03/02
	AT 11	CCTV Pole Detail	07/03/02
	AT 12	CCTV Pole Foundation For Dedicated CCTV Pole	07/03/02
	AT 13	120V VMS Cab Foundation Details	07/03/02
	AT 14	Weigh In Motion Piezo Detail	07/03/02
		Barriers (BA)	
	BA 1A	Precast Concrete Full Barrier Standard Section	12/19/02
	BA 1B	Precast Concrete Full Barrier Standard Section	12/19/02
	BA 2	Precast Concrete Half Barrier Standard Section	07/03/02
	BA 3	Cast In Place Constant Slope Barrier	12/19/02
	BA 4	Beam Guardrail Hardware	07/03/02
	BA 4A	Guardrail Transition	07/03/02
	BA 4B	Beam Guardrail Installation	12/19/02
	BA 4C	Beam Guardrail Anchor Type I	12/19/02
	BA 5	Traffic Control Cable	07/03/02

State-Orange Book With 8 ½" x 11" Plan Sheets

U	NUMBER	TITLE	CURRENT DATE
		Catch Basins and Cleanouts (CB)	
	CB 1	Standard Catch Basin	07/03/02
	CB 2	Curb Inlet Catch Basin	04/24/02
	CB 3	Standard Transition Concrete Lined Ditch To Pipe Or Diversion Box	07/03/02
	CB 4	Solid Cover For Standard Drawing DB 1 MS-18 Loading	07/03/02
	CB 5	Standard Screw Gate And Frame	07/03/02
	CB 6A	Standard Drop Inlet Details General Notes And Installation Detail	07/03/02
	CB 6B	Standard Catch Basin And Cleanout Box Drop Inlet Type "A" Details	07/03/02
	CB 6C	Standard Catch Basin And Cleanout Box Drop Inlet Type "B" Details	07/03/02
	CB 6D	Standard Catch Basin And Cleanout Box Drop Inlet Type "C" Details	07/03/02
	CB 6E	Standard Catch Basin And Cleanout Box Drop Inlet With Attached Apron Details	07/03/02
	CB 6F	Standard Catch Basin And Cleanout Box Drop Inlet With Attached Apron Details	07/03/02
	CB 6G	Standard Catch Basin And Cleanout Box Drop Inlet Type "D" Details	07/03/02
	CB 6H	Standard Catch Basin And Cleanout Box Drop Inlet Type "D" Tables	07/03/02
	CB 7	Standard Curb And Gutter Drop Inlet	07/03/02
	CB 8A	Double Catch Basin	07/03/02
	CB 8B	Double Catch Basin	07/03/02
	CB 9A	Standard Catch Basin and Cleanout Box Situation & Layout	07/03/02
	CB 9B	Standard Catch Basin and Cleanout Box Section Details	07/03/02
	CB 9C	Standard Catch Basin and Cleanout Box Schedule Of Installation 18" to 42" RCP 12" to 48" CMP	07/03/02
	CB 9D	Standard Catch Basin and Cleanout Box Schedule Of Installation 48" to 66" RCP 60" to 78" CMP	07/03/02
	CB 10A	Standard Catch Basin and Cleanout Box Situation & Layout	07/03/02
	CB 10B	Standard Catch Basin and Cleanout Box Section Details	07/03/02
	CB 10C	Standard Catch Basin and Cleanout Box Schedule Of Installation 42" to 60" RCP 48" to 72" CMP	07/03/02

U	NUMBER	TITLE	CURRENT DATE
		Crash Cushions (CC)	
	CC 1	Crash Cushion Markings	07/03/02
	CC 2	Crash Cushion Drainage Details Guideline A	07/03/02
	CC 3	Crash Cushion Drainage Details Guideline B	07/03/02
	CC 4	Details For Placement Crash Cushions Type A, B, & D	07/03/02
	CC 5	Grading And Placement Detail Crash Cushion Type C	07/03/02
	CC 6	Crash Cushion Type E Sand Barrel Details	12/19/02
	CC 7	Grading & Installation Details Crash Cushion Type F	04/24/03
	CC 8	Grading & Installation Details Crash Cushion Type G	04/24/03
	CC 9A	Grading & Installation Details Crash Cushion Type H	04/24/03
	CC 9B	Grading & Installation Details Crash Cushion Type H	04/24/03
		Diversion Boxes (DB)	
	DB 1A	Standard Diversion Box/Cover Plate/Grating For 18" DIA. or 24" DIA. Pipe	07/03/02
	DB 1B	Standard Diversion Box Hinged Lid Details For 18" DIA. or 24" DIA. Pipe	07/03/02
	DB 1C	Standard Diversion Box Bicycle - Safe Grating Details For 18" DIA. or 24" DIA. Pipe	07/03/02
	DB 1D	Standard Diversion Box Three Gate Box Sections For 18" DIA. or 24" DIA. Pipe	07/03/02
	DB 1E	Standard Diversion Box Three Gate Box Sections For 18" DIA. or 24" DIA. Pipe	07/03/02
	DB 1F	Standard Diversion Box Three Gate Box Sections For 18" DIA. or 24" DIA. Pipe	07/03/02
	DB 2A	Standard Diversion Box w/Interchangeable Walls, Bottom Slab, Walls and Apron Detail	07/03/02
	DB 2B	Standard Diversion Box w/Interchangeable Walls, Quantities Schedule	07/03/02
	DB 2C	Standard Diversion Box w/Interchangeable Walls, Hand Slide Gate Details	07/03/02
	DB 2D	Standard Diversion Box Type "G" Hand Slide Details	07/03/02
	DB 2E	Standard Diversion Box Hinged Lid (Solid Cover Plate) Type "A" Details Type I Plan	07/03/02
	DB 2F	Standard Diversion Box Hinged Lid (Solid Cover Plate) Type "A" Details Type II Plan	07/03/02
	DB 2G	Standard Diversion Box Hinged Lid Solid Cover Type "B" Details	07/03/02

U	NUMBER	TITLE	CURRENT DATE
	DB 2H	Standard Diversion Box Hinged Lid Solid Cover Type "B" & "C" Details	07/03/02
	DB 3A	Standard Diversion Box With Manhole Cover Situation And Layout	07/03/02
	DB 3B	Standard Diversion Box With Manhole Cover Up To 42" RCP and Up To 54" CMP	07/03/02
	DB 3C	Standard Diversion Box With Manhole Cover 48" - 72" RCP and 60" to 84" CMP	07/03/02
		Drainage (DG)	
	DG 1	Fill Height for Metal Pipe (Steel)	07/03/02
	DG 2	Fill Height for Metal Pipe (Aluminum)	07/03/02
	DG 3	Maximum Fill Height and End Sections For HDPE and PVC Pipes	12/19/02
	DG 4	Pipe Culverts Minimum Cover	12/19/02
	DG 5	Plastic Pipe, Metal Pipe or Pipe Arch Culvert Bedding	07/03/02
	DG 6	Precast Concrete Pipe Culvert	07/03/02
	DG 7	Gasketted Joints or Coupling Bands for C.M.P.	07/03/02
	DG 8	Metal Culvert End Sections	07/03/02
	DG 9	Miscellaneous Pipe Details	07/03/02
		Environmental Controls (EN)	
	EN 1	Temporary Erosion Control (Check Dams)	07/03/02
	EN 2	Temporary Erosion Control (Silt Fence)	04/24/03
	EN 3	Temporary Erosion Control (Slope Drain and Temporary Berm)	07/03/02
	EN 4	Temporary Erosion Control (Drop Inlet Barriers)	12/19/02
	EN 5	Temporary Erosion Control (Sediment Trap and Curb Inlet Barrier)	07/03/02
		Fence and Gates (FG)	
	FG 1A	Right-of-Way Fence and Gates (Wood Posts)	07/03/02
	FG 1B	Right-of-Way Fence and Gates (Wood Posts)	07/03/02
	FG 2A	Right-of-Way Fence and Gates (Metal Posts)	07/03/02
	FG 2B	Right-of-Way Fence and Gates (Metal Posts)	07/03/02
	FG 3	Swing Gates Type I for Gates Less Than 17'	07/03/02
	FG 4	Deer Gates	07/03/02

State-Orange Book With 8 ½" x 11" Plan Sheets

U	NUMBER	TITLE	CURRENT DATE
	FG 5	Swing Gates Type II for Gates Wider Than 17'	07/03/02
	FG 6	Chain Link Fence	07/03/02
		Grates, Frames, and Trash Racks (GF)	
	GF 1	Manhole Frame And Grated Cover	07/03/02
	GF 2	Manhole Frame And Solid Cover	07/03/02
	GF 3	Rectangle Grate & Frame	07/03/02
	GF 4	Directional Flow Grate & Frame	07/03/02
	GF 5	Solid Cover & Frame	07/03/02
	GF 6	Manhole Steps	07/03/02
	GF 7	Standard Screw Grate & Frame	07/03/02
	GF 8	2' x 2' Grate & Frame	07/03/02
	GF 9	28" x 24" Directional Flow and Frame	07/03/02
	GF 10	Standard Trash Racks 90E X-ing L	07/03/02
	GF 11	Standard Trash Racks	07/03/02
	GF 12	Standard Trash Racks	07/03/02
		General Road Work (GW)	
	GW 1	Raised Median and Plowable End Section	12/19/02
	GW 2	Concrete Curb and Gutter	04/24/03
	GW 3	Concrete Curb and Gutter Details	07/03/02
	GW 4	Concrete Driveways and Sidewalks	07/03/02
U	GW 5	Pedestrian Access	02/27/03
	GW 6	Right-of-Way Marker	07/03/02
	GW 7	Newspaper and Mailbox Stop Layout	07/03/02
	GW 8	Newspaper and Mailbox Support Hardware	07/03/02
	GW 9	Delineation Hardware	07/03/02
	GW 10	Delineation Application	07/03/02
		Paving (PV)	
	PV 1	Joints for Highways with Concrete Traffic Lanes and Shoulders	07/03/02
	PV 2	Pavement/Approach Slab Details	12/19/02

U	NUMBER	TITLE	CURRENT DATE
	PV 3	Concrete Pavement Details for Urban and Interstate	07/03/02
	PV 4	Concrete Pavement Details for Urban and Interstate	07/03/02
	PV 5	Urban Concrete Pavement Details	07/03/02
	PV 6	Rumble Strips	07/03/02
	PV 7	Rumble Strips - Typical Application	07/03/02
		Signals (SL)	
	SL 1	Traffic Signals Mast Arm Pole and Luminaire Extension	07/03/02
	SL 2	Traffic Signals Mast Arm Detail 25' Thru 65'	07/03/02
	SL 3	Underground Service Pedestal Details	07/03/02
	SL 4	Traffic Signals Mast Arm Pole Foundation	07/03/02
	SL 5	Breakaway Post Mounted Traffic Signal Pole	07/03/02
	SL 6	Power Source Details	07/03/02
	SL 7	Span Wire Signal Pole Detail	07/03/02
	SL 8	Signal Head Details	07/03/02
	SL 9	Pedestrian Signal Assembly	07/03/02
	SL 10	Controller Base Details	07/03/02
U	SL 11	Traffic Signals Loop Detector Detail	07/03/02
	SL 12	Junction Box Details	07/03/02
U	SL 13	Traffic Counting Loop Detector Detail	12/19/02
	SL 14	Light Pole Breakaway Base	07/03/02
	SL 15	Luminaire Breakaway Base Detail	07/03/02
	SL 16	Single Transformer Substation Details	07/03/02
	SL 17	Light Pole Anchor Base	07/03/02
	SL 18	Light Pole Foundation Extension	07/03/02
		Signs (SN)	
	SN 1	Bridge Load Limit Signs	07/03/02
	SN 2	Flashing School Sign	12/19/02
	SN 3	Overhead School Flasher	07/03/02
	SN 4	Flashing Stop Sign	12/19/02

U	NUMBER	TITLE	CURRENT DATE
	SN 5	Typical Installation for Milepost Signs	12/19/02
	SN 6	Not Used	
	SN 7	Placement of Ground Mounted Signs	07/03/02
	SN 8	Ground Mounted Timber Sign Post (P1)	12/19/02
	SN 9	Ground Mounted Tubular Steel Sign Post (P2)	07/03/02
	SN 10	Ground Mounted Square Steel Sign Post (P3)	07/03/02
	SN 11	Slipbase Ground Mounted Tubular Steel Sign Post (P4)	07/03/02
	SN 12A	Ground Mounted Sign Installation Details	07/03/02
	SN 12B	Ground Mounted Sign Installation Details	04/24/03
	SN 12C	Ground Mounted Sign Installation Details	07/03/02
		Striping (ST)	
	ST 1	Object Markers "T" Intersection & Pavement Transition Guidance	12/19/02
	ST 2	Freeway Turn Around Markings	07/03/02
	ST 3	Typical Pavement Markings	07/03/02
U	ST 4	Crosswalks, Parking and Intersection Approaches	07/03/02
U	ST 5	Painted Median & Auxiliary Lane Details	07/03/02
	ST 6	Passing/Climbing Lanes Traffic Control	07/03/02
U	ST 7	Pavement Markings & Signs at Railroad Crossing	12/19/02
	ST 8	Plowable Pavement Markers	07/03/02
		Structures and Walls (SW)	
	SW 1A	Welded End Guard Unit	07/03/02
	SW 1B	Precast Concrete Cattle Guard	07/03/02
	SW 2	Noise Wall Placement Area	07/03/02
	SW 3A	Precast Concrete Noise Wall 1 of 2	12/19/02
	SW 3B	Precast Concrete Noise Wall 2 of 2	12/19/02
	SW 4A	Precast Concrete Retaining/Noise Wall 1 of 2	12/19/02
	SW 4B	Precast Concrete Retaining/Noise Wall 2 of 2	07/03/02

State-Orange Book With 8 ½" x 11" Plan Sheets

U	NUMBER	TITLE	CURRENT DATE
		Traffic Control (TC)	
U	TC 1A	Construction Zone Channelization Devices	07/03/02
U	TC 1B	Construction Zone Signing	07/03/02
U	TC 2A	Traffic Control General	07/03/02
U	TC 2B	Traffic Control General	07/03/02
U	TC 3	Traffic Control Project Limit Signing	07/03/02
U	TC 4	Traffic Control Urban Intersections With Roadways Under 50 MPH	07/03/02
U	TC 5	Traffic Control Urban Intersections With Roadways Under 50 MPH	07/03/02
U	TC 6	Traffic Control Pedestrian Routing	07/03/02
	TC 7	Traffic Control Road Closed, Detour	07/03/02
U	TC 8	Traffic Control Lane Closure	07/03/02
U	TC 9	Traffic Control Multilane Closure	07/03/02
	TC 10	Traffic Control Expressway And Freeway Crossover/Turn-Around	07/03/02
	TC 11	Traffic Control Exit Ramp Gore	07/03/02
	TC 12	Traffic Control Entrance Ramp Gore	07/03/02
	TC 13	Traffic Control Shoulder-Haul Road	07/03/02
	TC 14	Traffic Control Flagging Operation	07/03/02
	TC 15	Traffic Control 2 Lane/ 2 Way Seal Coat With Cover Material	07/03/02
U	TC 16	Traffic Control Pavement Marking	07/03/02

XIV. Special Provisions

SPECIAL PROVISION
SP-0068(29)57

SECTION 00555M

PROSECUTION AND PROGRESS

PART 1 GENERAL

Add the following to paragraph 1.2 Notice to Proceed:

5. UDOT reserves the right to cancel any portion of this contract based on budgeting conditions and available funds at the time of construction.

Add the following to Paragraph 1.11 Limitation of Operations:

D. SR-68 R.P. 56.2 to R.P. 59.33 (2100 So. to North Temple)
Lane closures and work are restricted during the commute times (Monday thru Friday, 6am to 8:30am Northbound and 3:30pm to 6pm Southbound). All lanes must be open to traffic during these times. During working hours two lanes must remain open to traffic on the three lane sections and one lane must remain open to traffic on the two lane sections. During non-working times all lanes must be open to traffic. If the Contractor is able to obtain a variance to the noise ordinance work at night will be allowed.

The only work allowed this year (2003) will be to replace the Pedestrian Access Ramps, all other work will begin on April 1, 2004.

The Contractor shall also inform the traveling public of upcoming work 1 week prior to the start of construction with a Variable Message Signs as per the MOT concept. The message will be determined by the Project Engineer. During construction the signing shall be placed according to the Maintenance of traffic Concept attached to this package. It is anticipated that 6 VMS will be used for this project.

The Contractor will be expected to cooperate with the Contractor who will be replacing the signal system and pedestrian ramps at the following intersections: South Temple and 500 South. The Contractor will also cooperate with the Design Build contract which will be doing the signal system and ramps at the intersection of 2100 South.

END OF SECTION

June 9, 2003

SPECIAL PROVISION
SP-0068(29)57
SECTION 00725M

SCOPE OF WORK

PART 1 GENERAL

Add the following to Paragraph 1.2 Intent of Contract

B. Scheduling of work shall be approved by the Engineer Ten (10) days prior to beginning work on any portion of this project. See Special Provision 00555M for working time restrictions. No work or lane restrictions will be allowed on Holidays and any special events as determined by the Engineer.

C. It is the responsibility of the Contractor to document the location of the existing striping, pavement messages, manholes, monuments, valve boxes, and cleanout boxes by GPS or Total station. A copy will be furnished to the Engineer for his approval before any work begins. The Contractor is responsible for the layout of the new striping, pavement messages, and temporary pavement markings. The Contractor is responsible to locate, after paving, manholes, valve boxes, monument boxes and clean out boxes. The cost for the adjusted utilities will include the cost to lower and raise the utility. The utilities will be plated and the concrete will be a high early strength to have the traffic lanes opened to traffic and the end of each day. The mix design for the high early concrete will be approved by the engineer.

D. Temporary Pavement Markings will be placed on the rotomilled surface before the road is open to traffic and one more application after the roadway has the HMA overlay applied. The final Traffic Striping Paint will be applied no sooner than 14 calendar days and no later than 30 calendar days from the time the surfacing is finished.

E. If the existing curb grades are acceptable, the contractor will have the option of sawcuttting of the back of curb to match grades to the new ramp.

F. This project begins 70’ north of the monument at the intersection of 2100 South and Redwood road and goes to a point where the concrete begins at North Temple. The rotomill and thin overlay will go from edge of pavement to edge of pavement or lip of gutter to lip of gutter. At the beginning and end of the project, the existing pavement will be milled to provide a smooth transition of the pavement. The transition will be on a 20:1 taper and the cost will be included in the cost of the Thin Overlay. Traffic will be allowed to drive on the rotomilled surface for no more than 7 calendar days. No work will take place within 25’ of the railroad tracks. No rotomilling or surfacing will be placed on the approach slabs or structures at the interchange of I-80 and Redwood Road. The milling up to the structures will provide a smooth transition from the new asphalt to match the existing structures.

END OF SECTION

February 14, 2003

SPECIAL PROVISION
SP-0068(29)57

SECTION 01557S

MAINTENANCE OF TRAFFIC (MOT)

PART 1 GENERAL

1.1 DEFINITIONS

A. MOT Maintainer

B. Maintenance of Traffic (MOT) plans, Materials, and labor necessary for implementation.

C. Variable messages signs and construction signs.

1.2 RELATED SECTIONS

A. Section 00555: Prosecution and Progress.

B. Section 01554: Traffic Control

C. Section 02842: Delineators.

D. Section 02891: Traffic Signs.

1.3 REFERENCES

A. Manual on Uniform Traffic Control Devices, Latest Edition (MUTCD).

B. UDOT Standard Drawings.

C. American Traffic Safety Services Association (ATSSA).

1.4 DEFINITIONS

A. Maintenance of Traffic (MOT) is defined as the work necessary to advise the public of changes to normal traffic flow, and to indicate planned detours and alternate routes to closed roads. It is intended to be used solely as advisory information to the public.

1.5 POST-BID REQUIREMENTS

A. Develop an MOT plan for approval using the conceptual MOT plan supplied by the DEPARTMENT as a template. Submit plans in 11 x 17 format, prepared using CAD software. All plans must be signed and sealed by a professional engineer licensed in the State of Utah.

B. The apparent low bidder will attend a mandatory meeting as detailed in Section 01554, paragraph 1.4, line A.2.

C. Attendees of the mandatory meeting will review the CONTRACTOR's submitted traffic control plans and MOT plans for compatibility. Modify plans where necessary, as set forth in Section 01554, paragraph 1.5: Traffic Control Plan Requirements.

D. Do not begin work on the project until written approval of the MOT plan is received from the ENGINEER. No item of work can begin until the approved MOT plan is implemented for that phase of work.

E. The DEPARTMENT will grant an additional contract time for preparing or modifying the MOT plan.

1.6 MOT MAINTAINER

A. The Traffic Control Maintainer, as specified in Section 01554, paragraph 1.6 is responsible for maintenance of MOT on the project, this person shall not be the foreman or superintendent. No separate payment will be made for maintenance of MOT.

B. Inspect MOT devices daily for compliance with the MOT plans. Submit daily inspection reports on a form acceptable to the ENGINEER. Record readings from devices using hour meters on the form

1.7 MAINTENANCE OF MOT DEVICES

A. Maintain MOT devices in accordance with Section 01554, paragraph 1.7: Maintenance of Work Zone Traffic Control.

1.8 WAGE RATES FOR TRAFFIC CONTROL PERSONNEL (FEDERAL JOBS ONLY)

A. Refer to Section 01554, paragraph 1.8, for wage rate information.

1.9 PAYMENT PROCEDURES

A. Partial Payments – Based on the percentage of the project completed, excluding the cost of MOT.
   1. Failure to comply with any of the requirements of this special provision will result in non-compliance.

B. Price Adjustments:
   1. The Department reduces payment when the MOT is not in compliance with the approved MOT plan, or when the contractor fails to meet all requirements cited or referenced in this specification.
      a. The amount per day by which the CONTRACTOR's compensation will be reduced is calculated using the daily charge in the Schedule of Liquidated Damages in Table 1 of Section 00555 or the Contract lump sum bid price for MOT divided by the number of Contract days, whichever is greater.
   2. A stop work oreder issued due to non-compliance with this specification is not considered to be an authorized suspension of contract time. Contract time will continue to accrue as defined in Section 00555, article 1.14 "Determining Contract Time."

C. Payment for change in scope: Negotiate a price adjustment for MOT if the ENGINEER orders a change in the scope of work which requires modification to the approved MOT plan.

PART 2 PRODUCTS

2.0 SIGNS

A. Refer to Section 02891, Traffic Signs

B. Type and configuration as directed by the MOT plans.

2.1 VARIABLE MESSAGE SIGNS (VMS)

A. Conform to guidelines set forth in Section 6F-2 of the MUTCD.

B. Messages can be changed on –site and by dial-up modem.

PART 3 EXECUTION

3.1 MODIFICATION OF MOT PLANS

A. ENGINEER may modify the MOT plans at any time. Implement changes to the MOT plan before the end of the work shift.

B. Each phase of construction must be covered by an approved MOT plan. If a Construction phase is proposed that is not covered by a DEPARTMENT approved MOT plan, submit a proposed MOT plan to the ENGINEER for approval.
   1. Submit proposed MOT plan to the ENGINEER 10 working days before the proposed MOT plan is to be implemented.
   2. Do not begin until the proposed MOT plan is approved for use, and has been fully implemented.

3.2 TRAFFIC CONTROL DEVICES

A. Installation and Maintenance:
   1. Install appropriate devices for each construction phase as identified in the Appropriate MOT plan.
   2. Maintain devices to provide proper, continuous functionality.
   3. Wash devices weekly unless conditions warrant more frequent cleaning.
   4. Replace any device missing any part of the message or background.

B. Channelizing Devices: Use as directed by the MOT plan.

C. Furnish a daily record of the number and location of all traffic control devices in use.

D. Remove devices from the site of work daily when they are not needed for the immediate control of traffic.

3.3 VARIABLE MESSAGE SIGN (VMS)

A. The DEPARTMENT will retain control of messages appearing on the VMS. The CONTRACTOR will not change the location or the message configuration of the VMS unless directed to by the ENGINEER in writing.

B. Place in view of oncoming traffic without obstructing traffic flow. Relocate VMS to match field conditions at no additional cost to the DEPARTMENT.

C. Provide dial-up modem number to the ENGINEER.

D. Use necessary traffic control devices with VMS to provide safe operation.

E. Remove devices from the site of work daily when they are not needed for the Immediate control of traffic.

F. Unless otherwise specified, display advance notification VMS messages for a minimum of 7 days prior to start of work. Leave VMS in place through the duration of the project unless directed by the ENGINEER.

END OF SECTION

December 11, 2000

SPECIAL PROVISION
SP-0068(29)57

SECTION 01721 S

SURVEY

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Schedule, coordinate and provide all construction surveying, staking, surface area and volume quantity computations, and calculations essential to complete the project and properly control the entire work.

B. Directed surveying as requested by the ENGINEER.

1.2 RELATED SECTIONS

A. Section 02896: Boundary Survey

1.3 MEASUREMENT PROCEDURES

A. Directed Survey: If extra survey work is needed, directed Survey 2-Person Crew will be measured by the hour authorized. DEPARTMENT will make no additional payment for travel time to and from the project.

B. Directed Survey: If extra survey work is needed 3-Person Crew will be measured by the hour authorized. DEPARTMENT will make no additional payment for travel time to and from the project.

1.4 PAYMENT PROCEDURES

A. Survey will not be paid for as a separate item, but will be included in all items of work that require surveying. Failure to comply with any portion of this specification may result in withholding up to 25% of contract payments until the deficiencies are corrected.

B. If needed and approved, directed survey work will be paid for in the accepted quantities at the following rates:

2 person survey crew	$130.00 per hour
3 person survey crew	$155.00 per hour

C. If needed, payment for computations and/or drafting will be paid for at a rate to be agreed upon prior to proceeding with directed survey work. The number of hours required for computations and drafting cannot exceed 33% of actual survey hours and will be established on a percent basis prior to directed survey work starting.

1.3 SUBMITTALS

A. The Department requires that a Professional Engineer or Professional Land surveyor duly and properly registered in the State of Utah sign and seal all submittals.

B. Resubmittals may be required depending on completeness and correctness of the work.

C. Prior to beginning work, submit a statement indicating that the contractor has field checked all DEPARTMENT-provided horizontal and vertical control and has determined the control to be accurate within the tolerances specified in Part 3.4. Attach field survey information used to verify control. If discrepancies are found, notify the ENGINEER verbally and in writing.

D. Prior to beginning work, provide a written description of the equipment (including calibration certification), manpower, methods and data storage format the contractor proposes to use to complete all survey activities.

E. Submit plots of the original cross sections in Microstation/Inroads files and superimpose the design cross sections as slope staked.

F. Record-keeping: Keep all field notes, diaries, books and electronic files according to standard surveying practice.
   1. Loose leaf books will not be accepted.
   2. Make available at any time any and all survey records including field notebooks and forms used for the work to the ENGINEER upon verbal or written request.
   3. During construction, keep all documentation at a location approved by the ENGINEER.

G. After project completion, return to the ENGINEER all surveying and design data and "as staked/constructed" drawings in Microstation format clearly showing all final dimensions, lines, grades, tie-ins and deviations from contract plans.

1.4 QUALITY ASSURANCE

A. CONTRACTOR is responsible for survey and control of the work, and for correcting CONTRACTOR errors, whether the errors are discovered during the actual survey work or in subsequent phases of the project. CONTRACTOR bears any cost overruns resulting from CONTRACTOR errors.

B. Complete a preliminary verification of the plans and specifications prior to beginning construction.
   1. Immediately notify the ENGINEER of any discrepancies or deficiencies including discrepancies in grade, elevations, alignment, locations and/or dimensions.
   2. As the work progresses notify the ENGINEER of any discrepancies between the field survey and contract plans.

C. CONTRACTOR is not relieved by Submittal acceptance of the responsibility for maintaining the survey work and for correcting errors, whether the errors are discovered during the actual survey work or in subsequent phases of the project.

D. Qualifications: Furnish technically qualified survey crews and crew supervisor experienced in highway and bridge surveying and layout.

E. Perform all work in accordance with the plans and specifications and standard Engineering and Surveying practices under the responsible charge of a Professional Engineer or Professional Land Surveyor duly and properly registered in Utah.

F. The ENGINEER may spot check the work for accuracy and may reject unacceptable portions of work. Resurvey rejected work and correct work that is not within the specified tolerances at no additional expense to the DEPARTMENT.

PART 2 PRODUCTS

2.1 EQUIPMENT

A. Furnish tools, supplies and stakes suitable for use in highway survey work.

B. Furnish stakes and hubs of sufficient length to provide a solid set in the ground with sufficient surface area above ground for necessary legible markings.

C. Furnish survey instruments and supporting equipment capable of achieving the specified tolerances. Calibrate survey equipment for accuracy prior to beginning survey work and as required. Document that all equipment is functioning within manufacturers tolerances.

PART 3 EXECUTION

3.1 PREPARATION

A. Before survey work begins, discuss and coordinate the following with the ENGINEER:
   1. Required submittals
   2. Survey and staking methods
   3. Stake markings
   4. Grade control
   5. Referencing
   6. Structure control
   7. Any other procedures and control necessary for the work
   8. Documentation procedures

B. Establish construction survey points, elevations and grades as necessary to control layout and complete the work. Verify all control surveying and staking meets specified tolerances prior to beginning work.

C. Calculate all grades, elevations, offsets and alignment data necessary for staking and/or setting items of work. Obtain approval from the ENGINEER for alternate methods of establishing grade control with wire lines, computer or laser controlled grading or other suitable methods.

D. Provide appropriate traffic control for all survey activities.

E. The DEPARTMENT will furnish:
   1. Plans showing locations of control points
   2. Plans showing locations of Bench Marks
   3. Cross sections developed during design, if any
   4. Electronic project data, if any
   5. Digital Terrain Model used for design, if any

3.2 DIRECTED SURVEY

A. Conduct directed surveying if requested by the ENGINEER.
   1. Includes work needed for changes and extra work. Provide all labor, materials and equipment including but not limited to global positioning satellite equipment.
   2. Obtain prior written authorization from the Engineer documenting the affected work and requirements before performing work under these items.

3.2 COMPUTATIONS AND PLOTS

A. Use Microstation/Inroads files to generate electronic cross-sections, to calculate pay items that require volume measurements.

   1. Calculate preliminary quantities from this data, using the average end area method and submit plots and calculations to the ENGINEER for approval.

   2. When work is complete, superimpose final cross sections with original cross sections and calculate final quantities using the average end area method.
   3. ENGINEER may approve alternate methods for calculating quantities.

C. Develop cross-sections from field measurements.
   1. Take cross section measurements both before and after excavation and prior to backfill.
   2. When the centerline curve radius is less than or equal to 500', take cross sections at a maximum centerline spacing of 33'.
   3. When the centerline curve radius is greater than 500', take cross sections at a maximum spacing of 66'.
   4. Take additional cross sections at breaks in terrain and at changes in typical sections.
   5. For each cross section, measure and record points at breaks in terrain, but at least every 33' unless otherwise approved by the ENGINEER.
   6. Measure and record points to at least the anticipated slopes and reference locations.
   7. Reduce all cross section distances to horizontal distances from centerline.
   8. Take cross sections at right angles to tangents and normal to curves.
   9. Include in cross sections all grades, locations, and existing ground line profiles.

D. CONTRACTOR may develop cross sections from digital terrain models provided

that:

1. The ground survey locations do not exceed 100' in any direction
2. Major breaks in terrain are also included
3. The horizontal and vertical control for the project is used
4. The DTM is verified accurate to required tolerances by spot checking throughout the length of the project.

3.3 STAKE MAINTENANCE AND MARKING

A. Maintain ALL staking necessary for the work until the construction has been completed and accepted by the ENGINEER.
   1. Legibly mark all survey stakes with station and offset referenced to their respective control line.
   2. Mark slope, reference and guard stakes with station.
   3. Renew illegible stakes at no additional cost to the DEPARTMENT.

B. Provide and maintain reference stakes that identify stationing at least every 132' until all work has been completed and accepted by the ENGINEER.

3.4 CONTROL POINT AND SURVEY TOLERANCES

A. Relocate initial horizontal and vertical control points in conflict with construction to areas that will not be disturbed by construction operations. Furnish the coordinates, elevations and survey notes for the relocated points before the initial points are disturbed.

B. Protect bench marks from construction activities. Position all bench marks to allow a level rod to stand vertically and squarely on the mark. Reference bench marks to centerline and horizontal measurements.

C. Survey and establish control within the following tolerances:

Table 1

Survey Tolerances		

Description	Horizontal	Vertical
Control points	+/- 1/8"	+/- 1/8"
Centerline points	+/- 3/8"	+/- 1/4"
Cross sections and slope stakes	+/- 5/8"	+/- 5/8"
Slope stake references	+/- 5/8"	+/- 5/8"
Culverts and ditches	+/- 1 1/8"	+/- 3/8"
Minor drainage structures	+/- 1 1/8"	+/- 3/8"
Curb and gutter	+/- 1/4"	+/- 1/8"
Guardrail	+/- 5/8"	+/- 1/4"
Retaining walls	+/- 7/8"	+/- 1/8"
Bridge substructure and overall	+/- 1/8"	+/- 1/8"
Bridge superstructure and overall	+/-1/8"	+/- 1/8"
Clearing and grubbing limits	+/- 20"	----------
Right of Way Limits	+/- 1/4"	----------
Roadway subgrade and finish stakes	+/- 7/8"	Meet tolerance of succeeding layer.
Signals, electrical and striping	+/- 1"	+/- 1/4"

Coordinate the survey tolerances of any items not listed above with the ENGINEER.

D. Staking limits:
   1. Stake clearing limits on both sides of centerline at each established station. Locate the clearing limit on the ground as shown by the cut and fill limits on the plans.
   2. Stake right of way limits every 66' on tangents, every 33' on curves and at all right of way breaks.

E. Furnish reference stakes for all slope stakes and stakes used for setting items for work.
   1. Maintain the reference stakes for the duration of the project until the

ENGINEER approves removal.

2. Establish and set slope stakes and references on both sides of centerline at cross section locations.
3. Establish slope stakes in the field as the actual point of intersection of the design slope with the natural ground line.
4. Set slope stake references outside the clearing limits.
5. Include on the slope stake reference stakes all information necessary to establish offset and elevation of every PI on the typical section.

F. After the slope staking is completed, record on the cross section guard stakes the vertical distance from the reference point (RP) to the construction grade, at a minimum horizontal distance of 10' outside the clearing limits or at right of way.

G. Setting grade finishing stakes (redheads):
1. For grade elevations and horizontal alignment:
   a. On centerline
   b. On each shoulder at roadway cross section locations and between centerline and shoulder with a maximum spacing of 15'.
   c. At the top of subgrade and the top of each aggregate course.
2. Locations:
   a. Where turnouts are constructed, set stakes on centerline, on each normal shoulder, and on the shoulder of the turnout.
   b. In parking areas, set hubs at the center and along the edges of the parking area.
   c. Set stakes in all ditches to be paved.
3. The maximum spacing between stakes along the alignment is 66'.
4. Use brushes or guard stakes at each stake.
5. Reset grade finishing stakes as many times as necessary to construct the subgrade and each aggregate course.

3.5 CONCRETE PAVING

A. Place wire line on each side of screed for each placement.

B. Set string line control with vertical and horizontal control points placed at a maximum spacing of 66'.

C. Stake concrete joint and station stamp locations.

3.6 DRAINAGE STRUCTURES

A. Stake drainage structures to fit field conditions and in coordination with the ENGINEER. The location of the structures may differ from the plans.
1. Determine the slope catch points at inlets and outlets.

2. Set reference points and record information necessary to determine structure length and end treatments.
3. Stake ditches or grade to make the structure functional.
4. Plot the profile along centerline of the structure to show the natural ground, the flow line, the roadway section, and the structure.
5. Mark guard stakes with the following, when applicable:
    a. Diameter, length and type of culvert (i.e. 18" x 36' corrugated metal pipe (cmp)
    b. The vertical and horizontal distance from the hub to the invert at the end of the culvert or any intermediate point as needed or directed
    c. Flow line grade of the pipe
    d. Station
6. For storm sewers and waterlines provide a reference at a maximum spacing of 50'. Reference inverts of pipe at all manholes.

3.7 BRIDGES

A. Set a minimum of 3 horizontal and vertical control reference points to be used for all surveying all bridge substructure and superstructure components, including but not limited to: pile locations and cutoffs, line and grade for abutments and bents, beam seats, anchor bolts and screed grades.

B. Set intermediate slope stakes at bridge abutments to establish transitions. Place finish grade stakes on the centerline of abutment bearing and at the top of slope of all bridge berms. Place finish grade stakes on each side at top, mid-point or slope and toe of fill.

3.8 BOX CULVERTS

A. Set horizontal and vertical control and reference points. Establish and reference the centerline, back of parapet, skew and flow line elevations at inlet, outlet and breaks.

3.8 CURB AND GUTTER

A. Set curb and gutter staking at 33' intervals on tangent and 15' intervals on curve sections. Set line and grade for curb and gutter to the nearest 1/8" of the proposed or established grade line.

3.9 GUARDRAIL

A. Stake guardrail vertical and horizontal control at a maximum spacing of 33' on tangent sections and 15' on curved sections unless otherwise approved.

3.10 EXISTING SURVEY MONUMENTS

A. Under the direction of a surveyor licensed in the State of Utah, locate and reference all private and public land survey monuments that may be destroyed by project construction activities prior to disturbing said monuments.

B. Complete referencing and reestablishing said monuments at no cost to the DEPARTMENT and before project completion.

C. In some counties the county surveyor references and reestablishes the monuments. 1. Notify the county surveyor at least 30 days prior to the destruction of any monument.
   2. Coordinate the reestablishment of section corner and quarter corner monuments with the county surveyor.
   3. Submit drawings and notes showing references to section corners and quarter corners to the ENGINEER.

D. If a monument is found during construction but is not shown on the contract plans and must be reset, the DEPARTMENT will pay for the additional work under the Directed Survey item.

3.11 CLEAN UP

A. Remove and dispose of all flagging, lath, stakes and other staking material after the project is complete.

END OF SECTION

April 24, 2003

SPECIAL PROVISION
SP-0068(29)57
SECTION 02738 S

ASPHALT PAVEMENT SOFT SPOT REPAIR

PART 1 GENERAL

1.1 SECTION INLCUDES

A. Remove and replace soft spots in the existing pavement, as directed by the Engineer, by saw cutting around the area, removing the damaged asphalt, replacing the base if necessary, and relaying hot mix asphalt to a minimum of 6" deep.

1.2 RELATED SECTIONS

A. Section 02721: Untreated Base Course
Section 02741: Hot Mix Asphalt
Section 02708: Hot Mix Asphalt (QC/QA).

PART 2 PRODUCTS

2.1 UNTREATED BASE COURSE

A. Refer to Section 02721

2.2 HOT MIX ASPHALT

A. Refer to Section 02741 or 02708 for mix design and material requirements

PART 3 EXECUTION

3.1 REMOVE DETERIORATED ASPHALT SURFACING

A. Sawcut, full-depth, around the damaged area. Locate cut at least 6" beyond the visible limits of the distressed area or to a minimum patch width of 3' in all directions.

B. Remove the damaged asphalt surfacing without damaging the surrounding asphalt pavement.

3.2 BASE COURSE REQUIREMENTS FOR TYPE A (SURFACE ONLY) REPAIR

A. Grade and compact the existing base course surface.
- Use the largest piece of vibratory or impact compaction equipment possible.
- Control compaction using a nuclear density gauge.
- Continue compaction until additional work does not improve the measured density.

3.3 BASE COURSE REQUIEMENTS FOR TYPE B (FULL DEPTH) REPAIR

A. Excavate and remove 6" of existing base course. Replace with new untreated base course that conforms to Section 02721 of the specifications.

3.4 PLACE AND COMPACT HOT MIX ASPHALT

A. Place and compact hot mix asphalt mix to within ¼" of the existing surface. Compact material to minimum 92% of the maximum laboratory density.

END OF SECTION

August 12, 2002

SPECIAL PROVISION
SP-0068(29)57
SECTION 02742 S

PROJECT SPECIFIC SURFACING REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Required PG Asphalt or emulsion.

B. Number of gyrations to use for Superpave Mix Design.

PART 2 PRODUCTS

2.1 MIXES

A. Hot Mix Asphalt (HMA): (Refer to bid item for size)

1. PG __64-28_____ Asphalt.

2. $N_{initial}$ ___8_____ N_{design}____100_____ N_{final}____160_____

B. Open-Graded Surface Course:

1. PG _____ Asphalt.

C. Chip Seal

1. Type of asphalt emulsion _____

PART 3 EXECUTION Not used.

END OF SECTION

May 1, 2003

SPECIAL PROVISION

SP-0068(29)57

SECTION 02765S

PAVEMENT MARKING PAINT

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Furnish Acrylic Water Based pavement marking paint meeting Federal Specification TTP-1952 D and refer to 2.2 for resin requirement.

B. Apply to hot mix asphalt or Portland cement as edge lines, center lines, broken lines, guide lines, contrast lines, symbols and other related markings.

C. Remove pavement markings.

1.2 REFERENCES

A. AASHTO M 247: Glass Beads Used in Traffic Paint.

B. ASTM D 562: Consistency of Paints Measuring Krebs Unit (KU) Viscosity Using the Stormer-Type Viscometer.

C. ASTM E 1347: Color and Color-Difference Measurement by Tristimulus Colorimetry.

D. ASTM D 2205: Selection of Tests for Traffic Paints.

E. ASTM D 2743: Uniformity of Traffic Paint Vehicle Solids by Spectroscopy and Gas Chromatography.

F. ASTM D 2805: Hiding Power of Paints by Reflectometry.

G. ASTM D 3723: Pigment Content of Water-Emulsion Paints.

H. ASTM D 3960: Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings.

I. ASTM D 4451: Pigment Content of Paints.

J. ASTM D 5381: X-Ray Fluorescence (XRF) Spectroscopy of Pigments and Extenders.

K. Federal Standards 595B, 37875, 33538,11105 and TTP-1952 D.

1.3 ACCEPTANCE

A. Provide fixtures (ball valves, gate valves or other) on paint truck for the purposes of obtaining field samples.

B. Agitate the paint to allow for thorough mixing. Follow paint manufacturer's recommendation for agitation and mixing times.

C. Stop all agitation before sample is drawn.

D. All meters on the paint truck must be calibrated annually and certified for application rate verification. Calibration tolerances for meters must be +/- 0.5 pounds per gallon. Keep a clean, legible copy of calibration report with the paint truck. Certifications performed by company personnel, meter calibration companies or UDOT Equipment Certification Unit.

E. UDOT ENGINEER:

1. Visually inspects each line to verify bead adhesion and compliance with specified line dimensions requirements.
2. Verifies that the paint and beads are being applied within specified tolerances a minimum of once each production day.
3. Verifies quantities used by either method:
    a. Measuring both paint and bead tanks prior to and after application.
    b. Witnessing the meter readings prior to and after application.
4. Randomly sample each color of pavement marking paint used, minimum of one sample each per project.
    a. Use a clean one pint metal paint can.
    b. Sample paint immediately after the paint has been completely agitated. (Stop all agitation before drawing the sample)
    c. Allow a minimum of 10 gallons to be applied prior to taking sample.
    d. Fill the sample container to within ½ inch of full.
    e. Seal the containers immediately by tightly attaching the container's lid.
    f. Submit paint samples to Central Chemistry Lab for acceptance.
    g. For each sample include:
        - Project Number
        - Project Name
        - Paint Manufacturer
        - Batch Number

- Striping Company
- Color of Paint
- Est. Quantity
- Date Sampled
- Sampler's name

F. Repaint any line or symbol failing to meet bead adherence and dimensional requirements.

G. Price Reductions for Pavement Markings installed below the specified wet mil thickness are outlined in Table I.

H. Contractor will repaint pavement markings that fail to meet the quantitative requirements of Article 2.2 Paint, at no cost to the Department.

Table I - Price Reduction for Wet Mil Thickness	
	Pay Factor
At the specified mil thickness	1.00
1-10 percent below the Specified wet mil thickness	0.75
11-15 percent below the Specified wet mil thickness	0.50
More than15 percent below the Specified wet mil thickness	Replace Pavement Markings

PART 2 PRODUCTS

2.1 Manufacturers

A. Select an acrylic water based pavement marking paint manufacturer from the Accepted Products Listing (APL) maintained by the UDOT Research Division.

2.2 Paint

A. Follow Federal Standards 595B, 37875, 33538, and 11105. Meet the following quantitative requirements for Acrylic Water Based Paint listed in Table II:

Table II - Quantitative Requirements

Property	White	Yellow (lead free)	Black	Test
Pigment: Percent by weight	62.0 +/- 2	62.0 +/- 2	62.0 +/- 2	ASTM D 3723
Total Solids: Percent by weight, minimum	77.0	77.0	77.0	ASTM D 2205
Nonvolatile vehicle: Percent by weight vehicle, minimum*	40.0	40.0	40.0	ASTM D 2205
Viscosity, KU @ 77 degrees F	80 - 95	80 - 95	80 - 95	ASTM D 562
Volatile Organic Content(VOC): lbs/gal, maximum	1.25	1.25	1.25	ASTM D 3960
Directional Reflectance: Minimum	92.0	50.0	N/A	ASTM E 1347
Dry Opacity: Minimum (5 mils wet)	0.95	0.95	N/A	ASTM D 2805

* The binder shall be 100 percent acrylic, a minimum of 40 percent, by weight, as determined by infrared analysis and other chemical analysis available to UDOT (ASTM D 2205). Consisting of either Rohm and Haas Fastrack HD- 21A or Dow DT-400NA.

B. Additional requirements:
1. Free of lead, chromium, or other related heavy metals ASTM D 5381.
2. ASTM D 2743, ASTM D 4451 and ASTM D 5381: Tests used to verify paint samples meet “Accepted Products Listing.”

2.3 GLASS SPHERE (BEADS) USED IN PAVEMENT MARKING PAINT

A. Specific Properties: Meet AASHTO M 247.
   1. Gradation:

Passing a No. 14 sieve, percent	95 - 100
Passing a No. 16 sieve, percent	80 - 95
Passing a No. 18 sieve, percent	10 - 40
Passing a No. 20 sieve, percent	0 - 5
Passing a No. 25 sieve, percent	0 - 2

   2. Beads having a Silane adhesion coating.
   3. Roundness - The glass beads will have a minimum of 80 percent true spheres.

B. Beads used in Temporary Pavement Markings meet AASHTO M247 Type II uniform gradation.

PART 3 EXECUTION

3.1 PREPARATION

A. Line Control.
   1. Establish control points at 100 ft intervals on tangent and at 50 ft intervals on curves.
   2. Maintain the line within 2 inches of the established control points and mark the roadway between control points as needed.
      a. Remove paint that is not placed within tolerance of the established control points and replace at no expense to the Department. Refer to article 3.4.
      b. Maintain the line dimension within 10 percent of the width and length dimensions defined in Standard Drawings ST1 - ST8.

B. Remove dirt, loose aggregate and other foreign material and follow manufacturer's recommendations for surface preparation.

3.2 APPLICATION

A. Apply Pavement marking paint at the following Wet mil thickness requirements.
1. 20 – 25 wet mils for all markings.

Example Calculation: (Verify wet mil thickness)

$$\text{Wet Mils} = \frac{(0.133681\ ft^3/gal)}{(X\ ft/gal)(Z\ ft)} * 12000\ mil/ft$$

Where,
X = application rate. (Meter readings or dipping tanks).
Z = line width measured in feet.
12000 = conversion from ft to mil
0.133681 = conversion from gallons to cubic feet.

For information only: Approximate application rate for required mil thickness requirements.
1. 4 inch Solid Line: From 190 to 240 ft/gal
2. 4 inch Broken Line: From 760 to 960 ft/gal
3. 8 inch Solid Line: From 95 to 120 ft/gal

B. Refer to Table I for pavement markings that are less than 20 wet mils in thickness.

C. No additional payment for pavement markings placed in excess of 25 wet mils in thickness or exceeding dimensional requirements outlined in Article 3.1 paragraph A.

D. Painted Legends and Symbols 1 gallon per 80 square feet. Provide Engineer calculations of legends and symbols for pay determination.

E. Glass Sphere (Beads): Apply a minimum of 8 lbs/gal of paint, the full length and width of line and pavement markings.
1. Do not apply glass beads to contrast lines (black paint).

F. Begin striping operations no later than 24 hours after ordered by the Engineer.

G. At time of application apply lines and pavement markings only when the air and pavement temperature are:
1. 50 degrees F and rising for Acrylic Water Based Paint.

H. Comply with Traffic Control Drawing TC-16

3.3 CONTRACTOR QUALITY CONTROL

A. Application Rate: Verify that the paint and beads are being applied within specified tolerances prior to striping.

B. Curing: Protect the markings until dry or cured. In the event that the uncured marking is damaged the marking will be reapplied and track marks left on the pavement will be removed at no additional cost to the Department.

3.4 REMOVE PAVEMENT MARKINGS

A. Use one of these removal methods:
   1. Grinding
   2. High pressure water spray
   3. Sand blasting
   4. Shot blasting.

B. Do not eliminate or obscure existing striping, in lieu of removal, by covering with black paint or any other covering material.

C. Use equipment specifically designed for removal of pavement marking material.

END OF SECTION

February 27, 2003

SPECIAL PROVISION

SP-0068(29)57

SECTION 02771M

CURBS, GUTTERS, DRIVEWAYS, PEDESTRIAN ACCESS RAMPS, AND PLOWABLE END SECTIONS

Add the following to Part 2, Products:

2.5 DETECTABLE WARNINGS

A. Detectable Warning Surface – In-line truncated dome pattern that meets the requirements of Standard Drawing GW5. Provide a dark color (black or charcoal) that visually contrasts with adjoining concrete surfaces. Acceptable products for installation are as follows:

1. Detectable Warning Panels – Fiberglass, homogenous UV stable, integral color, skid resistant, non-glare finished panels.

2. Stamped Concrete.

3. Precast Concrete Pavers.

Delete Paragraph E from Article 3.3, FINISHING CONCRETE.

Add the following to Part 3, Execution:

3.6 DETECTABLE WARNING SURFACE

A. Panel Installation:

1. Install panels directly on the cured concrete surface using adhesive and fasteners in accordance with manufacturer recommendations.

B. Stamped Concrete Installation:

1. Use color hardener and liquid stamp release agent in accordance with manufacturers recommendations. Refer to Section 02776.

2. Stamp detectable warning surface to produce a durable, consistent truncated dome pattern that meets the dimensional requirements as shown in Standard Drawing GW5.

C. Precast Concrete Paver Installation:

1. Construct as shown on the plans. Ensure the surface is even, and there is a tight fit between pavers.

2. Cut pavers to fit the angles shown on the pedestrian ramp detectable warnings area.

END OF SECTION

April 23, 2003

SPECIAL PROVISION
SP-0068(29)57
SECTION 02893 M

TRAFFIC SIGNAL

PART 1 GENERAL

Add the following to paragraph 1.1:

1.1 SECTION INCLUDES

B. Replace damaged loop detectors and/or counting loops.

END OF SECTION